

AMENDMENTS TO THE CLAIMS

The following is a complete, marked-up listing of revised claims with a status identifier in parenthesis, underlined text indicating insertions, and strike through and/or double-bracketed text indicating deletions.

Listing of Claims

1. (Currently Amended) A paper- or a cardboard-based security product, which ~~comprises~~comprising:

~~at least one of a paper product or~~ and a cardboard product, which is equipped with

~~a detectable security symbol which can be detected~~ provided to layer of the at least one of the paper and the cardboard product, characterized in that the security symbol layer ~~comprises~~ including[(a)] ~~an electrically conductive polymer layer in the~~ product, which layer consists of a synthetic, electrically conductive polymer, the electrical conductivity of which ~~the layer has been~~ being locally ~~changed~~ changeable to form a ~~figure~~ security symbol pattern that is one of electrically conductive or, alternatively, electrically non-conductive, and

~~a figure on~~ at the surface of the ~~at least one of the paper and~~ the cardboard product is provided with a ~~figure~~, the figure being designed to indicate which indicates the presence of the security symbol.

2. (Currently Amended) A product according to claim 1, characterized in that ~~wherein~~ the security symbol ~~comprises~~ a layer that is formed by an electrically conductive polymer that is ~~the layer is~~ fitted below ~~the~~ a surface layer of the ~~at least one of the~~

paper ~~or~~and the cardboard product.

3. (Currently Amended) A product according to claim 1, ~~characterized in~~
~~that~~wherein the electrically conductive polymer comprises an independently
electrically conductive polymer that ~~can be~~ is doped ~~in order~~ to generate charge
carriers.

4. (Currently Amended) A product according to claim 3, ~~characterized in~~
~~that~~wherein the layer ~~containing~~ including ~~an~~ the electrically conductive polymer is
one of rendered locally non-conductive by dedoping the polymer with an alkali solution
or[.]~~alternatively~~, rendered locally conductive by doping the polymer with an acid
solution containing a doping agent.

5. (Currently Amended) A product according to claim 1, ~~characterized in~~
~~that~~wherein the security symbol comprises a bar code.

6. (Currently Amended) A product according to claim 1, ~~characterized in~~thatwherein
the layer ~~comprising~~ including an electrically conductive polymer layer is identifiable
on the basis of at least one of ~~its~~ electrical conductivity ~~or the colour~~ and ~~color~~ of the
~~layer or a combination of these~~.

7. (Currently Amended) A product according to claim 6, ~~characterized in~~
~~that~~wherein ~~it becomes evident from~~ the figure on the surface of the at least one of

the paper product or and the cardboard surface product is designed to indicate where to establish how the electrical conductivity of the security symbol can be established.

8. (Currently Amended) A product according to claim 7, characterized in that by using a figure on wherein the surface of the at least one of the paper or and the cardboard product includes at least two points have been marked on the surface in such a manner that the electrical conductivity between these two points forms the security symbol of the product.

9. (Currently Amended) A product according to claim 7, characterized in that wherein the figure comprises at least one of text or and a graphic symbol.

10. (Currently Amended) A product according to claim 1, characterized in that wherein the figure, besides indicating the security symbol, also is configured to provide provides the at least one of a product description or and the directions for use of the at least one of the paper or and the cardboard product or and a product included in it therein.

11. (Currently Amended) A product according to claim 1, characterized in that wherein the electrically conductive polymer layer is includes at least of one of a polyaniline, a polypyrrolidine or and a polytiophene.

12. (Currently Amended) A method of manufacturing a paper- or a cardboard-based security product, according to which method comprising:

providing at least one of a paper product and/or a cardboard product;

providing is provided with a detectable security symbol to a layer of the at least one of the paper product and the cardboard product, which can be detected, characterized in that at the layer comprising an electrically conductive polymer is fitted in the product, the electrical conductivity of the electrically conductive polymer in the layer is being one of locally changed to form an electrically conductive or, alternatively, locally changed to form an electrically non-conductive figure security symbol pattern,
and

equipping the at least one of the paper product and/or the cardboard product surface is equipped with a visual mark which indicates configured to indicate the presence of a the layer that comprises an the electrically conductive polymer.

13. (Currently Amended) A method according to claim 12, characterized in that further comprising changing the electrical conductivity of the polymer is changed by one of doping the electrically non-conductive polymer or, alternatively, by dedoping the electrically conductive polymer.

14. (Currently Amended) A method according to claim 13, characterized in that wherein the electrically non-conductive polymer is doped by treating the polymer layer with an acid solution, which is used to paint a desired figure on the surface of the at least one of the paper product and/or the cardboard product.

15. (Currently Amended) A method according to claim 13, characterized in thatwherein the electrically conductive polymer is dedoped by treating the polymer layer with an alkali solution, which is used to paint a desired figure on the surface of the at least one of the paper product and/or the cardboard product.

16. (Currently Amended) A method according to claim 13, characterized in thatwherein the electrically conductive polymer is doped by printing a desired figure on the surface of the at least one of the paper product and/or the cardboard product using printing ink ~~which is capable either of one of~~ doping or dedoping the electrically conductive polymer.

17. (Currently Amended) A method according to claim 12, characterized in thatfurther including fitting the security symbol ~~comprises a layer fitted below the surface layer of the~~ at least one of the paper and/or the cardboard product, ~~said layer being formed by the electrically conductive polymer, in which case, in order to dope or, alternatively, dedope the polymer, an acid or, alternatively, an alkali solution is absorbed through the surface layer of the paper or the cardboard product~~.

18. (Currently Amended) A method according to claim 12, characterized in thatfurther including printing a figure, ~~from which it becomes evident how the electrical conductivity of the security symbol can be established, is printed on the~~ at least one of the paper or and the cardboard surface product, the figure indicating where

to establish the electrical conductivity of the security symbol.

19. (Currently Amended) A method according to claim 17, characterized in thatfurther
including printing on the surface of theat least one of the paper product and/or the
cardboard product a figure is printed inby which at least two points have been
marked, such that the electrical conductivity between thesethe two points forms the
security symbol of the product.

20. (Currently Amended) A method of confirming the authenticity of a security
product, comprising: according to which method

providing one of a paper product or a cardboard product provided withhaving a
detectable security symbol, which can be detected,is used as a security product, and
confirming the authenticity by identifying electrical conductivity of the paper
product or the cardboard product at a location of the security symbol, characterized in
thatwherein a layer of the paper product or the cardboard product
comprisescomprising a synthetic,an electrically conductive polymer, the electrical
conductivity of which has been locally changed to form one of an electrically
conductive or, alternatively, non-conductive figure, is formed in the productsecurity
symbol pattern, and the authenticity of the security product is confirmed by
identifying the electrical conductivity of the paper or the cardboard product at the
location of the security symbol.

21. (Currently Amended) A method according to claim 20, characterized in

~~thatwherein~~ a figure indicating the presence of ~~a-the~~ security symbol is fitted onto the surface of the paper product or the cardboard product, said figure showing ~~how-where~~ to establish the electrical conductivity of the security symbol.

22. (Currently Amended) A method according to claim 20, characterized in ~~thatwherein~~ the electrically conductive polymer is doped by printing a figure on ~~the-a~~ surface of the paper product or the cardboard product~~surface~~, using printing ink which is capable of one of doping or dedoping the electrically conductive polymer.

23. (Currently Amended) A method according to claim 20, characterized in ~~thatwherein~~ the authenticity of ~~a-the~~ paper product or ~~a~~the cardboard product is confirmed by treating ~~a-the~~ security symbol with one of a doping or dedoping agent and by observing a change in the electrical conductivity of the security symbol.

24. (New) A method according to claim 12, further including forming said security symbol pattern by doping the polymer by absorbing an acid through the surface layer of the at least one of the paper product and the cardboard product.

25. (New) A method according to claim 12, further including forming said security symbol pattern by dedoping the polymer by absorbing an alkali solution through the surface layer of the at least one of the paper product and the cardboard product.